arched, not concave over the nostrils. Tarsus as long as the middle toe without claw. Third primary the longest, slightly longer than the second and fourth; the first as long as the sixth. Claw on the wing rounded, pointed, slightly curved.

The sternum is long and narrow, slightly constricted below the costal border. Coracoids separated; anterior portion between the grooves slightly concave, smooth, without any median process. Five sternal ribs articulate to the sternum, and there is a sixth flying sternal rib. Lateral processes slender, parallel, produced considerably beyond the end of the sternum, not dilated at the ends; the keel strong, well developed, with a convex exterior margin. The scapula forms a right angle with the coracoid. Length 1·33 inch; breadth ·53; depth of keel ·35; length of coracoid ·78; length of scapula 1·32.

XLII.—*On* Harpa novæ-zealandiæ (*Gmel.*). By F. W. Hutton, Professor of Natural Science in the Otago University.

As a help towards settling the disputed point as to whether there are in New Zealand one or two species of the genus *Harpa*, or whether there are two distinct races or subspecies included under *H. novæ-zealandiæ*, I have, for the last five years, carefully examined and measured every specimen belonging to that genus that has passed through my hands, and I now lay the results before the readers of 'The Ibis.'

The difference, if any, between the two species or subspecies appears to rest entirely on size. Dr. Buller says, "but for the manifest difference in size it would be impossible to distinguish the two birds" ('Birds of New Zealand,' p. 7).

Mr. Sharpe certainly says that the subspecies *H. australis** is "similar to *H. novæ-zealandiæ*, but smaller and more ashy brown above" ('Catalogue of Birds,' i. p. 374); and in a later paper Dr. Buller says, that in a comparison of *two* individuals, "*H. novæ-zealandiæ* has the bars on the upper surface far more distinct and numerous, besides being of a brighter rufous, the tail-coverts are more conspicuously marked, the bars on the tail are broader and whiter, and there is a larger amount of white on the throat, breast, and abdomen;" and he further remarks, "there are other minute points of difference, but these may be mere individual peculiarities" (Trans. N.Z. Inst. vii. pp. 213, 214). Of the twelve specimens of *Harpa* that have passed through my hands during the last five years, any one of them, so far as plumage is concerned, might be referred to either species; and as the birds mentioned by Dr. Buller in the seventh volume of the 'Transactions of the New-Zealand Institute' appear to be the only two that he has examined since writing his descriptions in the 'Birds of New Zealand,' I fail to see how he can state that some of the differences found in this pair are of specific value, while others are only individual peculiarities.

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* *H. australis*=*H. brunnea*=*H. ferox*. Dr. Buller is mistaken in saying that the name of *H. ferox* has priority over *H. australis*, for *H. australis* was given in 1841, and *H. ferox* not until 1848 (see Sharpe, 'Catalogue of Birds').

Dr. Buller's statement that the eggs of *H. australis* are smaller and lighter in colour than those of *H. novæ-zealandiæ* ('Birds of New Zealand,' p. 10) cannot rest on much evidence. It may have been taken from Mr. Potts's statement that some eggs of *H. novæ-zealandiæ*, taken from a range near the headquarters of the Rakaia, were somewhat less than usual, and of a yellowish instead of a reddish-brown colour (Trans. N.Z. Inst. ii. 1869, p. 51). Mr. Potts's observation (Trans. N.Z. Inst. vi. p. 141) that the smaller bird looks flatter about the head, and carries the wings more prominently forward than does the larger bird, is not inconsistent with the supposition that the smaller bird is the male, and the larger bird the female of one and the same species. And the verbal statement of Mr. Oakden to Mr. Potts, that the young birds in one nest were smaller than those in another nest, has no scientific value.

This being the case, I have not thought it worth while to record any differences in coloration, further than to mention whether each bird is in the adult or immature plumage;

consequently the annexed table is confined to measurements only. Every individual was examined as to its sex by myself, as well as by Mr. Jennings, taxidermist to the Museum, and in one case only is there any doubt on this point. The measurements were all taken by myself in the flesh, according to the directions given by Dr. Coues in his 'Key to North-American Birds,' p. 55. The length of the toes does not include the claws, as these are subject to much variation. The measurements are in inches and decimal parts of an inch.

It is necessary to take the measurements of the two supposed species from Dr. Buller's work; for although several of the specimens in the British Museum have the sex attached, Mr. Sharpe appears to doubt the accuracy of the labels, as he does not give their dimensions, but only quotes Dr. Buller. Now an inspection of my table will show that, according to Dr. Buller, the specimen B should be a male, and A a female, of *H. novæ-zealandiæ*, while all the rest would be males of *H. australis*. But B is a female bird, and it is too large to belong to *H. australis*; consequently we must assume, if Dr. Buller be right, that the female of *H. novæ-zealandiæ* is sometimes no larger than the male. Again, if there are two species, then, although both are found in the neighbourhood, all the males that have come into this Museum belong to *H. australis*, while the two females belong to *H. novæ-zealandiæ*.

I have no doubt that Mr. Sharpe, and also Dr. Buller, would be of opinion that there is only one species if it were not for the measurements of a few specimens, the sex of which is said to be accurately known. It is necessary therefore to examine these cases. They are three in number, and all come from the Canterbury Museum.

The first is a male of *H. novæ-zealandiæ*, mentioned by Dr. Buller at page 3 of his 'Birds of New Zealand,' the sex of which was ascertained by Dr. v. Haast. This bird is much larger than any of the males in my table, but agrees in size with the female marked B.

The second individual is a female of *H. australis*, mentioned by Dr. Buller in the introduction to his 'Birds of New

Zealand.' This bird, the sex of which was also determined by Dr. v. Haast, is said to be much smaller than the male of *H. novæ-zealandiæ*; but no measurements are given.

The third individual is also a small female of *H. australis*, mentioned by Dr. Buller in the 'Transactions of the New-Zealand Institute,' vii. p. 213. The sex of this bird was ascertained by the late Mr. Fuller, at that time taxidermist to the Canterbury Museum. It is much smaller than any female in my table.

Of these three instances, the second has been effectually disposed of by Mr. Potts, who pointed out (Trans. N.Z. Inst. vi. pp. 140, 141) that Dr. v. Haast was mistaken in supposing that he got this bird on the nest and determined its sex, as the bird in question was shot and skinned by Mr. Phillips, who presented it to Dr. v. Haast, who guessed at its sex. The two birds mentioned by Dr. v. Haast were not obtained on a nest at all, but were shot at different times by Mr. Phillips whilst attacking his poultry.

With regard to the third specimen, some doubt is thrown on the accuracy of the determination of the sex by the fact that the sex of the specimens of *Ocydromus australis*, sent by the Canterbury Museum to Dr. Finsch, the measurements of which are given in the 'Journal für Ornithologie,' 1870, p. 353, were wrongly marked, the females being made out to be larger than the males, the exact opposite being well known to be the case. It must also be noticed that this supposed female in the Canterbury Museum is of exactly the same dimensions as several of the males in my table, and is less than the measurements of the female of *H. australis* given by Dr. Buller.

With regard to the first case (the supposed male of *H. novæ-zealandiæ*), little can be said, except that its dimensions agree closely with those of my specimen B, which is a female; and I think that this observation requires confirmation before it can be accepted.

It will be noticed in the table that the length of the tarsus is nearly the same in the two sexes, but in both the females the legs were much thicker and stronger than in the males; and, notwithstanding the disparaging remarks of Dr. Buller and of Dr. Finsch, I must again point out that the sexes can be easily distinguished by the difference in the tarsi. I have myself kept and flown hawks, and I can with confidence appeal to all practical falconers, as to whether the Tiercel cannot

	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.
	Female, adult. April 27, 1875.	Female, immature. April 10, 1875.	Male, immature. June 26, 1875.	Male, adult. May 20, 1879.	Male, immature. June 26, 1875.	Male, immature. May 29, 1875.	Male, adult. May 14, 1874.	Male, immature. July 24, 1875.	Doubtful, immature. May 28, 1879.	Male, immature. May 20, 1875.	Male, immature. May 15, 1876.	Male, immature. August 9, 1874.
Length	19·0	19·0	16·5	16·25	16·25	16·25	16·0	16·0	16·0	16·0	15·75	15·5
Extent	36·0	35·0	31·0	31·0	31·0	29·5	?	31·0	30·5	30·5	31·0	?
Wing	12·0	11·25	10·0	10·5	10·25	10·0	10·5	10·5	10·5	10·0	10·0	10·0
Tail	9·0	8·4	7·6	8·0	7·5	7·4	7·8	7·0	8·0	6·8	7·5	7·6
Culmen	1·15	1·15	1·0	1·1	1·1	1·1	1·05	1·1	·93	1·1	1·1	1·1
Bill............	·92	·95	·8	·95	·9	·88	·9	·85	·82	·9	·85	·92
„ depth........	·8	·77	·65	·62	·63	·68	·6	·57	·6	·7	·63	·6
„ breadth	·58	·57	·57	·52	·55	·6	·6	·45	·55	·57	·57	·55
Tarsus	2·45	2·43	2·35	2·33	2·35	2·4	2·3	2·45	2·3	2·4	2·4	2·3
Outer toe	1·4	1·25	1·25	1·08	1·15	1·17	1·03	1·27	1·07	1·0	1·2	1·1
Middle toe.....	1·98	1·73	1·6	1·7	1·65	1·6	1·6	1·75	1·53	1·6	1·6	1·6
Inner toe	1·05	1·05	·96	1·0	·95	·93	·9	1·0	·85	·93	1·05	·85
Hind toe	·95	·85	·7	·73	·75	·65	·65	·77	·72	·75	·78	·67

always be distinguished from the Falcon by the slenderness of its legs; and in this respect, as well as in the length of its toes, our Sparrow-Hawk approaches the Peregrine.

XLIII.—*On a new Pheasant from the North-west Himalayas.*

By Capt. G. F. L. Marshall.

Pucrasia biddulphi, sp. n.

Male. Sides of the head and back of the neck dark metallic green, with a blue gloss towards the neck; forehead and crown green, turning into sandy brown; mesial crest sandy brown, with the lateral sincipital tufts black, tipped with green. Sides of the neck white; mantle black, some of the feathers edged with stone-grey, and some with sandy brown. Back grey, each feather with a black streak down the centre; upper tail-coverts and rump grey, each feather centred buff, with a dark brown margin to the buff on each side. Tail—central feathers reddish brown, mottled with black; the remaining feathers deep brown, nearly black, mottled with chestnut on the outer web at the basal half, tipped with white, and narrowly edged with light brown. Throat and foreneck greenish black. Centre of breast and abdomen deep chestnut, each feather narrowly margined with black; sides of the breast grey, with a broad black central stripe and black shaft to each feather; flanks similar to the sides of the breast in general style, but the feathers are white-shafted, and the central stripe is much broader and has a brownish tinge instead of being pure black. Thigh-coverts somewhat similar to the flanks, but paler, and with a white central streak in the brown. Under tail-coverts deep chestnut, with a broad white tip, and a black bar dividing the white tip from the chestnut. Scapularies and tertiaries brown, with yellowish-brown edgings, and a narrow central streak of raw sienna, pale-shafted. Wings—quills brown, broadly margined with sandy yellow; the greater coverts grey, narrowly centred with black, and having the shafts tipped with white; the lesser coverts of the same type as the scapularies.